

Ivan Ivanov

## *Pains and Sounds*

**Abstract:** *I argue that an analogy between pains and sounds suggests a way to give an objective account of pain which fits well with a naïve perceptualist account of feeling pain. According to the proposed metaphysical account, pains are relational physical events with shared qualitative nature, each of which is constituted by tissue damage and the activation of nociceptors. I proceed to show that the metaphysical proposal is compatible with platitudes about pains being animate, private, and self-intimating states.*

The past decade has witnessed the emergence of naïve realism as a serious rival of intentionalism about perceptual phenomenology. In a series of papers (Martin, 2002; Travis, 2004; Brewer, 2006; Kalderon, forthcoming a), naïve realists have argued that their programme, while equally explanatory, is more commonsensical than intentionalism.<sup>1</sup> The need for an argument for perception being a matter of representation rather than presentation was acknowledged only recently,<sup>2</sup> and is yet to be adequately met.

In view of those recent developments in the philosophy of perception, it seems puzzling that naïve realists are yet to make a significant impact in the literature on sensory consciousness. Some might object that there is nothing surprising, since sensations are not the chief subject matter for the naïve realist. Naïve realists have been notoriously

Correspondence:  
Email: [ivanivanov2010@u.northwestern.edu](mailto:ivanivanov2010@u.northwestern.edu)

- 
- [1] Moreover, the question of whether the phenomenal properties of conscious experience extend beyond the cognitive, the representational, and the functional (see Block, 2005) can be straightforwardly translated in the naïve realist framework as the question of whether the phenomenal properties of conscious experience extend beyond the cognitive, the presentational, and the functional.
- [2] See Byrne (2009); Pautz (2009); Schellenberg (forthcoming); and Siegel (2010). Crane (2006) makes an excellent case that the issue of whether perception fundamentally involves a relation to concrete particulars should be deemed basic for the field.

*Journal of Consciousness Studies*, **18**, No. 9–10, 2011, pp. ??–??

elusive and equivocal about non-standard experiences such as hallucinations, while unanimously insisting that the nature of the latter is distinct from the nature of standard perceptual experiences. It could be that they regard bodily sensations as non-standard states of consciousness.<sup>3</sup>

Though it could be so, it should not. Since there is nothing intuitively anomalous about bodily sensations, as opposed to hallucinations, naïve realists are not justified in bracketing sensory consciousness without an argument. And if it turns out that no good reason can be given for treating the nature and phenomenology of perceptions and sensations differently, intentionalists, who can give a unified perceptualist account of both, would have a significant dialectical advantage over naïve realists.

In this paper, I offer a metaphysical account of pain which fits well with the naïve realist account of perception.<sup>4</sup> On the proposed view, pains, like sounds, on one influential account, are relational physical events with shared qualitative nature.

I begin with a brief outline of naïve realism. In the second section, I provide phenomenological evidence in favour of the view that pains are mind-independent physical items of the sort that the standard sensibles are. In the third section, I articulate a challenge to the naïve realist account of pain, based on a disanalogy between colours and the hypothetical objects of pain. In the fourth section, I defuse part of the challenge by considering the extent to which the objects of pain count as natural. In the remainder of the paper, I respond to the main part of the challenge by drawing an analogy between pains and sounds. In the fifth section, I outline a recent proposal regarding the metaphysics of sound, and in the sixth section I use this proposal to draw some relevant parallels between pains and sounds. In the final section, I bring up two features of pain which may appear inconsistent with my proposal, and show that they are fully consistent with the relational event view of pain.

---

[3] Interestingly, McDowell's (1994) account of pain is, in many respects, analogous to his (1986) account of hallucination. He regards both hallucinations and sensations as distinct in kind from perceptual experiences, yet dependent on the subject's ability to perceive the environment (in a distinctive, cognitively and epistemically-significant way). Though McDowell is a disjunctivist intentionalist rather than a naïve realist, the suggested asymmetric dependence has been adopted by naïve realists, regarding hallucinations.

[4] The metaphysical account can also be adopted by intentionalists, although I am sceptical that intentionalism can be successfully motivated.

### I. Naïve Realism

I take naïve realism (NR) to consist in the conjunction of two theses: **naïve presentation** and **phenomenal relationalism**. According to **naïve presentation**, any standard experience is identical with a primitive three-way non-intentional relation taking place between (1) a subject, (2) a physical particular (object, event, trope), and (3) a perspective from which the particular is encountered.<sup>5</sup> **Phenomenal relationalism** states that, regarding any standard experience E of subject S, at least some aspects of the phenomenal character of E are constituted by (1) the physical particulars and conditions S is acquainted with *qua* having E, qualified by (2) perspective P (which S happens to occupy).<sup>6</sup>

Naïve realism is thus a view on which the nature and the phenomenal character of perceptual episodes are metaphysically connected. NR explains the phenomenal character of experiences in terms of the nature of experience (namely the three-way primitive presentation relation), and appeals to phenomenological, semantic, and epistemological considerations to defend the proposed view of the nature of experience.<sup>7</sup>

Applied to cases of feeling pain, NR would predict that:

---

[5] Perspectives are objective entities. A perspective, together with an item, determines the respective way the item appears by restricting access to some of its qualitative nature. Think about the view from a given platform overlooking the Grand Canyon. That view amounts to 1) a selection of some from among all the visible features of the Grand Canyon, and 2) an aspectual qualification of the accessible features.

It is important to note that a perspective is, among other things, bound to involve facts about information processing. Being similarly positioned with respect to an object is not sufficient for occupying the same perspective with respect to it and for that reason does not always make available the same qualitative features of the object under the same aspects. A pigeon and you looking out from the same platform at the Grand Canyon would not have access to the same scene. For further elaboration, see Campbell (2002).

[6] Thus stated, phenomenal relationalism does not apply to hallucinatory experiences. Concerning those, most naïve realists have adopted so-called negative disjunctivism. On this general view, whatever the nature of hallucinatory phenomenology, it is distinct from the nature of standard phenomenology — consequently, perceptions and matching hallucinations have nothing substantial in common.

However plausible, negative disjunctivism is not obligatory. On an alternative view that I have proposed (Ivanov, in preparation), causally matching hallucinations amount to acquaintance relations between subjects and sense data.

[7] For a predominantly phenomenological defence of realism, see Martin (2002); and Pautz (2010) (although the latter does not endorse the argument he presents); for a predominantly semantically-based defence, see Campbell (2002); for an epistemic defence, see Roessler (2009).

- (1) standard hurting experiences amount to presentation relations taking place between a subject, a physical particular of a distinctive type, and a perspective qualifying the particular;
- (2) at least some aspects of the character of a standard hurting experience are constituted by the qualitative nature of the particular encountered by the subject from the given perspective.<sup>8</sup>

The theory is consistent with further factors, besides items perceived and the qualifying perspective, contributing to the determination of the character of hurting experiences: such as top-down attentional effects, so-called cognitive penetration effects, and hard-wired functional connections with affect and behaviour.

Further specification of the naïve realist account of experiencing pain would concern (1) the nature of the presented physical particulars, and (2) perspectival effects on phenomenology. In the rest of the paper, I will largely focus on the first issue.

## II. Motivating Naïve Realism About Pain

As with naïve realism concerning perception of the environment, the intuitions in favour of a naïve realist account of experiencing pain are pre-theoretical. The evidence for the view is grounded in the sheer phenomenology of painful episodes. Just like perceptual experiences, episodes of pain have presentational phenomenology. When we reflect on such episodes, we describe what it is like to be in them by invoking particulars of a distinctive kind presenting themselves to us. Those particulars have temporal parts and can be easily classified along several qualitative dimensions just as the standard sensibles (colours, sounds, tastes, smells, etc.) can be. As phenomenal relationalism would have it, the character of painful experiences appears, in each case, to be constituted by the qualitative features of the presented particular.

My claim is that phenomenology provides defeasible rather than conclusive evidence for naïve realism, in general, and for naïve realism about pain episodes, in particular. This evidence could be relied on uncritically only in a pre-philosophical Eden.<sup>9</sup> The discovery of complex causal processes mediating perception, of information processing, of perceptual illusions and hallucinations, the possibility of qualia inversion, and the cognitive and epistemic role of perception

---

[8] Again, this leaves open the nature of phantom limb pain, referred pain, and artificially induced pain.

[9] See Chalmers (2006).

have each appeared to some to be incompatible with NR. However, each has turned out to be accountable under NR, so at this point NR does not appear to fare worse than rival theories of perceptual phenomenology. If this is the right characterization of the present dialectical context, the additional phenomenological evidence would tip the scales in favour of naïve realism.

One could object to my claim that presentational phenomenology favours naïve realism, based on the undeniable fact that intentionalists and qualia theorists can also accommodate it. But that they can accommodate it does not entail that perceptual phenomenology provides the same evidence for their views as it does for mine. Consider an analogy. If you were presently the subject of a causally matching hallucination, you would have a subjectively indiscriminable experience. So your present experience is compatible with your hallucinating. However, your experience does not give you evidence that you are hallucinating. In fact, it provides some (defeasible) evidence that you are genuinely perceiving letters on a page.<sup>10</sup>

Similarly, I argue that phenomenology favours naïve realism. The reason is that the character of one's experience provides reflectively accessible evidence concerning its nature. If I bracket further philosophical concerns and reflect on the character of my present experience, I conceive it as a relation to concrete items, located in space, which I presently see. On the contrary, if intentionalism, for instance, were true, the character of my experience would amount to a relation to an item or a number of items (propositions) that are abstract, have no location, and cannot be seen. My phenomenology is silent concerning the second option, but is quite vocal concerning the first.

So, merely in virtue of being in pain, a subject has evidence that she is presented with a concrete particular. Furthermore, such particulars have experiential locations, which are naturally described as physical locations. Both when we assert 'I have a pain in my leg' and 'I have a muscle cramp in my leg', on the most superficial analysis of the sentences, we locate the respective particular in a certain region of physical space, namely the region of one's leg. Perhaps, as Noordhof (2005) has argued, the sense of 'in' is not purely spatial: in that case we do not mean that the pain is located in the spatial region that the leg occupies; rather we mean that the pain is a mode or state of the leg. Even so, since 'I have a pain and a cramp in my leg' is well-formed and arguably has only one reading, both the pain and the cramp would be modes or states of the same object — namely, my leg. It is unclear

---

[10] See Pryor (2000).

how a non-physical item could possibly occupy physical space, or how a non-physical mode or state could possibly be a state of a physical object. Perhaps, with a lot of philosophical work, either could be shown to be possible, but not so on any unsophisticated understanding of the physical. To sum up, we have some phenomenological evidence that when we feel pain, we are related to a particular located in a body part of ours, and that the particular is physical in some folksy but still demanding sense — in which colours, shapes, and smells are physical, while mirages and afterimages are not.

Murat Aydede has suggested that we also have pre-theoretical evidence *against* taking the presented particulars to be physical in kind. According to him, ‘the truth conditions of “I feel a jabbing pain in the back of my hand” put no constraints whatsoever on how things *physically* are with my hand’ (Aydede, 2009, p. 533), the reason being that ‘[a]nyone who has a sufficient mastery with the ordinary concept of pain should have no difficulty whatsoever in understanding how [“I feel a jabbing pain in the back of my hand”] could be true even though there is nothing physically wrong with my hand’ (*ibid.*, pp. 533–4). However, being able to understand a sentence does not always put one in the position to give its truth-conditions. No doubt, it is true that a naïve subject does not conceive of the pain in the back of her hand as identical to any *specific* physical condition of the hand. But if naïve subjects do not need to fully understand the nature of pain in order to be competent with the concept ‘pain’ (which is plausible since ‘pain’ is a recognitional concept), it is understandable why they cannot identify the pain in the back of their hand with anything physical.

Against this, Aydede would claim that our use of the ordinary concept pain reveals that our conception of pain places substantial constraints on its nature, namely that an instance of pain cannot be identical with anything physical at the experienced location. Suppose it turns out there was nothing wrong with the hand. Aydede claims that the subject can still truly (and felicitously) assert ‘I feel a pain in that hand’. I agree. But, as others (Bain, 2003; Tye, 2005a) have suggested, I think it can be simultaneously true that one feels a pain and false that one has a pain (anywhere). As Aydede rightly emphasizes, there is a peculiar disanalogy between ‘I see something’ and ‘I feel something’ reflected in ordinary usage. But given that there is also an analogy between ‘There is an itch in my foot’ and ‘There is a cramp in my foot’, I can think of no good reason, *at this early stage of evidence*

*gathering*, to trace the source of the disanalogy back to the nature of the presented items.<sup>11</sup>

In conclusion, naïve realism about feeling pain has big intuitive plausibility, even if there is no *a priori* way for a subject in pain to carve, with precision, the joints of the particulars she is presented with *qua* being in pain.

### III. The Real Trouble with Realism

There is, however, a more serious problem in the vicinity of Aydede's objection, which makes the view that pains are physical particulars that constitute sensory phenomenology significantly less plausible. If naïve realism about feeling pain is true, pains cannot be instances of tissue damage, they must be something less natural, in Lewis's terminology. Suppose, for reductio, that a given pain was identical with an instance of tissue damage. Then pains would lack the qualitative features they appear to have, phenomenal relationalism would not be satisfied, and naïve realism would be in trouble.

Let me explain why some have taken instances of damage as unsuitable to constitute sensory phenomenology in the sense required for phenomenal relationalism to be true. First, it is an empirical fact that further, upstream states of one's nervous system physically co-determine the phenomenology along with the damage. Massively varying phenomenology could result from the same state of damage. And, conversely, a non-noxious state such as the activation of one's receptors for touch, could, with the appropriate neural wiring, produce an experience with the same phenomenal character.<sup>12</sup> One could object that the damage still plays some role in the determination of phenomenology and thus phenomenal relationalism is easily satisfied. But this is wrong. Consider a putative exemplification of the constitution relation required by phenomenal relationalism. When you see a red tomato, on the naïve realist view, one aspect of the complex character of your experience is constituted by the qualitative nature of the mind-independent colour of the tomato — its determinate *redness*. There may be additional, top-down attentional and cognitive effects

[11] Relatedly, Block (2005) claims that there are no pre-theoretical grounds for allowing pain hallucinations. I agree. But I take the disanalogy between ordinary perception and pain to be due to the distinctive 'hook-up' of sensory faculties, which, while still being like perceptual faculties in having physical items as relata, appear to mainly subserve cognitive and behavioral functions that do not involve representations with belief-like direction of fit, or are not subject to standard norms of rationality.

[12] I borrow this example from Burge (1997) who appeals to the empirical work of Ramachandran (1993).

on that aspect of phenomenology, but, intuitively, those effects are compatible with the presence of the qualitative nature of the colour to the subject. On the other hand, the quality that is present to me would, intuitively, not be present to a spectral invert looking at the same tomato, despite the fact that the same surface property is causing his experience and plays some part in the determination of phenomenology. Such considerations have led naïve realists to discard the simple hypothesis that colours are identical with sets of reflectances.

Similarly, in the case of pain, naïve realists would be forced to reject the plausible hypothesis that what subjects get presented with when feeling pain are instances of tissue damage. But what is perceived if not the damage? Here are three conditions that the presented item would need to satisfy to fit with the naïve realist account of pain. It needs to be (1) a physical item located in a limb, having (2) a qualitative nature apt to make a phenomenal difference, (3) which gets to constitute phenomenology despite the upstream neural processing. The burden is on the realist to come up with a plausible candidate for such an item. Until then, one should rightfully be sceptical about whether physical particulars are present to one *qua* being in pain. Problems about subjects feeling pains in a limb in the absence of such limb or as a result of damage in another body region are downstream from this major problem.

In the case of colour, realists have (effectively, in my opinion) proposed identifying a shade with a relational property, indexed to a type of perceptual system, which is realized by a reflectance-type.<sup>13</sup> Perhaps a similar account could be given for the object of pain. Pains would thus amount to relational properties indexed to perceptual systems, realized by a disjunctive set of states of bodily damage.<sup>14</sup>

However, there is a further complication with pain which arguably does not arise in the case of colour. In the passage below, David Bain presents two thought experiments which highlight the difference between pains and colours:

Suppose, when Amy is young, the nerves connecting her left foot's pain receptors to her brain are severed because something had gone wrong in that foot such that those receptors are constantly stimulated. Might

[13] See Kalderon (2007; forthcoming b). Another way to put the same point is that colours have multiply qualitative natures, and that having a visual system of a certain type restricts access only to some of the nature of the colour. A given colour can both be human-red and alien-green, in so far as a human and an alien do not occupy the same perspective with respect to the multiply qualitative colour.

[14] Another way to put this is to say that the objects of painful experiences have multiply qualitative natures, and only some aspects of the nature of such an object would be accessible to a normal human subject related to the object.

Amy sensibly be told, after the operation, that she will have a pain in her foot for the rest of her life whether or not she is ever again in pain? Surely not. If hurting is objective, moreover, why might a foot not hurt even after it itself is removed? (Bain, 2007, p. 188)

On the naïve conception, colours, despite being taken to have rich qualitative natures apt to determine phenomenology, do not depend for their existence on the existence of perceiving subjects. This is not the case with pains, suggests Bain. Surely there is nothing painful in a foot after it has been amputated. Neither does telling Amy that her foot will keep hurting for the rest of her life sound right. So whatever the objects of pain may, according to the realist, amount to, they cannot be constituted by tissue damage — at least not by it alone.<sup>15</sup> Therefore, colours cannot provide a suitable reductive model to the realist about pains. The story about pains is bound to be messier. But colours are themselves barely natural. They are second-order properties realized by disjunctive sets of the same physical type (surface reflectance). In the case of pain, the sets plausibly involve instances of tissue damage, but, since the damage persists after amputation, something extra must be added to ensure that we won't get the counter-intuitive result that there is still something painful in a gangrenous foot once it has been amputated.

Thus developed, the objection specifically targets an abundant physicalist analysis of the putative objects of sensation, not an abundant physicalist analysis of the standard sensibles in general. It threatens to drive a wedge between the standard sensibles, on the one hand, and the objects of pain and of other sensations, on the other. In my view, this alleged distinction has been the major impetus driving sense-datum views, and more recently — qualia views of pain. If nothing in a limb could be such as to be apt to constitute the specific character of a given pain, in the way that phenomenal relationalism would require, then painful character must either be constituted by non-physical items (sense-data), or it is intrinsic rather than relational. Based on considerations of parsimony, qualia theorists have taken the second option.

Interestingly though, based on the same consideration, sense-datum and qualia theorists have a reason to be perplexed about attempts at

---

[15] Later in the same paper, Bain grants naïve realists brute restrictions on the occurrence of pains in limbs, such as the limb being undetached and appropriately innervated. My point is that such restrictions cry for explanation. As Bain suggests, there is a very plausible explanation inconsistent with realism, namely that pains are essentially subjective states (Bain, 2007, p. 188). The naïve realist cannot accept the restriction without offering an alternative explanation.

intentionalist reduction of painfulness. The reason is straightforward: if one doubts that there can be anything in a limb whose qualitative nature can counterfactually covary with the character of a painful sensation so as to be eligible to constitute painfulness, one should also be doubtful that being in a state of pain amounts to naturalistically tracking anything in the foot. Conversely, if one could come up with something in the foot which standardly covaries with the sensory phenomenology of pain in the same way as the abundantly physical nature of a colour covaries with an aspect of visual phenomenology, it would turn out that, thus far, no good reason has been given to reject naïve realism about pain in favour of a more theory-laden view, namely intentionalism.<sup>16</sup>

Now let's be a bit more charitable and transform the major objection to the naïve realist view of pain into the form of a two-part challenge:

- (1) What item (be it object, trope, state, or something else) in a given limb could possibly be such as to be eligible to determine the phenomenology of one's pain by presenting itself to the subject?
- (2) What reason do we have to take the candidate item to be physical?

#### **IV. Pains and Colours: Equally Natural**

The focus of my paper is on the first issue. My thesis is that the proper objects of hurting experiences are relational events constituted by tissue damage and the activation of nociceptors. Such events have a complex qualitative nature that is apt to determine phenomenology. This proposal will be developed in what follows. In this section, however, I want to briefly address the second issue. I agree that the physical basis

---

[16] In his response to Tye (2005a), Block (2005) expresses the conviction that 'there is no obvious candidate for an objectively assessable property that bears to pain experience the same relation that color bears to color experience' (p. 204). Later (p. 205) he defends it similarly to Bain: 'In the case of color, a physicalist theory has some plausibility. For example, colors may be held to be sets of reflectances. This account fits with the idea that there could be colors in a world with no perceivers, since tomatoes could reflect light even if no one was there to see it. But a physicalist account of Subjective Qualities in terms of tissue damage is not remotely plausible, for the reason given above — the Subjective Qualities of a toe depend not only on the tissue damage but on the connection between tissue damage and the brain.' Of course the intentionalist response (Tye, 2005b) is that pains do not represent tissue damage but a more complex property in the vicinity of tissue damage. I think this is a good response but, for the reasons expressed in the paragraph above, I believe it favours naïve realism.

of the objects of painful experiences, conceived this way, looks gerrymandered. But the gerrymandering is merely apparent.

First, the basis of the proper objects of pain is, unquestionably, more complex than the basis of colours. However, once we've considered the hypothesis that pains are relational events, the messiness ceases to be a problem. For relational events are perfectly natural, and any relational event supervenes on states of at least two objects.

Secondly, the boundaries of the basis of pain appear to be drawn arbitrarily. Why include the state of the nociceptors, along with the damage, but exclude spinal and brain augmentations? Of course, if I did admit more, pains would no longer be located in the indicated body region and I would no longer be giving a theory of pain that supports naïve realism about pain. It is crucial, for a naïve realist, to restrict the basis of pain to states of the limb. However, I do not leave out upstream states merely because only this way can the ontology of pain be made consistent with my preferred account of the experience of pain and of perception in general. I maintain that subjects of pain have evidence favouring an account on which pains are relational events localized in body parts. The role of the analogy with sounds I draw below is to foreground and systematize this evidence. It is true that I take the same evidence also to favour naïve realism about feeling pain, but this doesn't mean that the credibility of the relational event view of pain is dependent on the credibility of naïve realism. The phenomenological support for the relational event view of pain would still be there even if intentionalism were true.

Lastly, the basis is disjunctive. But this has also been a problem for colour physicalists. The question, in both cases, is what reason we have to view the disjuncts as realizers of a single physical property.

The proposed answer in the case of colours is that the reason to hold that exactly those and no other reflectances realize a given physical property is that the reflectances share a causal power, namely the power to cause appropriately equipped subjects to perceive their qualitative nature. Very roughly, the colour of an object causes the subject to perceive the colour along with its qualitative similarities and differences with respect to other determinate shades. It does this by being sufficient, in appropriate circumstances (including the subject's having a normally functioning visual system of a given type), to cause the occurrence of an acquaintance relation between itself and the sub-

ject.<sup>17</sup> A shade is a set of physical properties sharing the same causal power with respect to a type-perceiver.

My fairly modest claim is that, if we grant some plausibility to this defence of colour physicalism, then exactly the same account can be given regarding pains and other sensations. We do not read off the families of colours from the base up: rather, when we come into physical contact with the colour, in virtue of the colour's causal power, we get presented with an aspect of its qualitative nature, which grounds similarities and differences between the colour and the rest of the colours. Identifying the physical properties that realize colours is an empirical discovery. Still, it is guided by our imperfect but largely reliable ability to identify, spatially locate, and compare colours based on being presented with them in experience. Even the fact that colours interact with light is prefigured by the experience of colour constancy in varying conditions of illumination.

I argue that we have an analogous experience-based ability to identify, locate, and carve sensations along their qualitative joints. Moreover, we have as much reason to regard those joints as physical joints as we have reason to regard colours as physical properties.

### V. Sounds: A Very Brief Introduction

There are three main families of views concerning the nature of sound: proximal, medial, and distal theories. Modern acoustics is largely based on a medial theory of sound, according to which sounds are identical with mechanical vibrations transmitted by an appropriate medium. Psychologists have tended to rely on a proximal theory of sound, construing sounds as sensations. Recently, however, distal theories of sound have gained support in the philosophical community (see Casati and Dokic, 1994; Pasnau, 1999; 2007; and O'Callaghan, 2007). Against the proximal theory, there is evidence that sounds are objective entities. Against the medial theory, sounds appear to have distal spatial locations. The proximal and medial theories are thus bound to maintain that the content of our auditory experience is massively misleading with respect to the nature and location of sounds. In comparison, on the distal theories, sounds normally end up located where they appear to be located, namely in the vicinity of their sources.

On the least refined distal view (Pasnau, 1999), sounds are properties of their sources in the way that colours are properties of objects.

---

[17] On this issue, see the exchange between Shoemaker (2002) and Calderon (forthcoming a).

But the analogy is imperfect. For one, auditory experiences provide no evidence for sounds being properties of their sources, in the way visual experiences provide evidence for colours being properties of objects. We do not hear sounds inhering in their sources in the same way as we perceive colours inhering in objects. It is plausible that the sources are not at all present in auditory experience — rather, we merely hear sounds, based on which we can recognize their sources. Furthermore, the relation between sounds and their sources is naturally described as causal: we say that objects make sounds, not that they have sounds. And conversely, we don't say that objects make properties.

Furthermore, sounds, unlike properties, are experienced as unfolding in time. So they are better construed as events caused by their sources rather than as properties of their sources. Most metaphysicians of sound these days accept a version of the distal event view of sounds. The major division in the camp has been between those who take sounds to be monadic events and those who take sounds to be relational events. According to the most plausible monadic event view (Casati and Dokic, 1994; Pasnau, 2007), sounds supervene on vibration processes in their sources. According to the relational event view, sounds are events involving both processes in their sources and processes in the select proximal medium surrounding the respective source.

Here is one reason to believe that sounds do not supervene solely on vibrations in their sources: sounds are experienced as spatially located, but a cross-referencing with vision reveals that the experienced location of a sound does not quite match the experienced location of objects. The sound and the source are not experienced as strictly co-located (see O'Callaghan, 2009). The second, decisive consideration is that vibration processes in a given source are arguably unsuitable to determine the qualitative nature of a sound on its own: the same source would produce different sounds in different environments, and no sound in a vacuum (*ibid.*). To bring the point home, it is not just that the sound is available to the perceiver only in some environments or that it will be experienced in a different manner in different environments and by different perceivers (all of which is true of colours). It is that the role of the select environment, in the case of sound, is not just to facilitate access to an item with certain qualitative nature (as is the case with colour), but to co-constitute that qualitative nature. Therefore, a distinction is to be made between what I shall call the immediate and the distal environment of a sound source. While the distal environment merely qualifies which aspects of the

qualitative nature of a sound are available to a perceiver and how, the immediate environment co-determines the very qualitative nature of the sound.

According to the view that is favoured on the basis of those considerations, sounds are not states of their sources. They are not states of the sound environment, either. Sounds are dynamic individuals constituted by sound sources interacting with the immediate environment. The objects of hearing are physical events constituted by dynamic processes in the source (vibrations) and states of the immediate environment of the source (medium compression).

## VI. Pains and Sounds

In this section, I am going to draw the dialectically relevant implications for the nature of pain, based on the proposed parallel with sound. But first let me motivate the analogy.

As I argued in the second section of the paper, we have pre-theoretical evidence for the view that pains are some sort of physical item located in body parts or regions. Such items appear to have a dynamic structure and are best thought of as events.

I then focused on difficulties involved in building a theory based on this evidence, since the most obvious candidate for being pain (tissue damage) is not a good pick. Reservations against taking pains to be instances of damage have customarily been based on (1) the persisting intuition that, despite being closely tied to pain, tissue damage is distinct from what is perceived by the subject when in pain, and (2) the intuition that tissue damage is not complex enough to be the object of pain. I focused on the second issue, showing that the problems with a view on which pains are constituted by tissue damage are distinct and more serious than those confronting the view on which colour instances are constituted by reflectances. My suggestion is that this second problem is analogous to the problem confronting the view on which sounds are taken to be monadic events: vibrations of the sound sources seem insufficient on their own to constitute a particular sound.

I also take the first intuition at face value and consider it analogous to the intuition that sounds and sources cannot be identical (since they are not co-located). In the case of sounds, the evidence for this intuition is easier to come by — we can easily visually attend to a sound source as it is making a sound. In the case of most pains, we cannot easily focus on the specific region of damage, as the damage is usually internal. But there are cases of surface damage or disturbance when

we can (roughly) visually single out the area of damage. In such cases, arguably we have evidence that the pain and the damage are not co-located. The pain is experienced as enveloping the region of damage rather than being fully contained within it.

That pains and sounds are of the same metaphysical genus is suggested by those analogies. The idea is that the analogous theoretical problems are based on our having perceptual access, in both cases, to instances of metaphysical species belonging the same genus. And if coming up with the right genus can solve those problems concerning one of the species, it could also help with the other.

Let me now draw the analogy, taking sounds to be relational events. First, regarding the nature of pain:

- (1) Just as a sound does not supervene solely on the disturbance in its source, it would follow that a pain does not supervene solely on tissue damage. Even though a pain and the corresponding damage are distinct, there is a metaphysical connection between them. Tissue damage, along with states of a suitable immediate environment, determines the occurrence of a particular pain.
- (2) In the case of a sound, the immediate environment comprises the relatively homogenous gaseous or liquid surroundings of the sound source. Those surroundings are to be distinguished from the distal environment: the downstream medium through which information about the sound propagates and which can affect the way we experience the sound.

In the case of pain, the immediate environment is the innervated body part or region. The analogue to air compression is the activation of nociceptors. On my view, importantly, nociceptors are not pain receptors — rather, they are potential constituents of pain. So the nature of a pain is not determined by the nature of damage alone but also by the nature of nociception, so it is bound to be fairly complex and vary depending on the condition of the nociceptors involved.

- (3) The location of a pain is a complicated issue. What follows from the analogy with sound is that the damage and the produced pain are not co-located, but overlap. For that reason, referred pains are clearly misleading with regard to their sources. Whatever may be said about their nature (that they are a type of hallucination, or perhaps that they are cases in which experiencing a pain provides the subject with inadequate or misleading information about its location), the apparent location of referred pains cannot be their actual location.

- (4) The conditions of individuation of sounds are complex. As dynamic individuals, sounds (i) are unrepeatables, and (ii) have parts that are spatially and temporally continuous. No source or environment other than the original can sustain a given sound; furthermore, a sound cannot cease and begin again. Lastly, those conditions are necessary but not strictly sufficient for the persistence of a sound: there could be qualitative differences that mark distinct sounds while no sharp discontinuity could be detected physically.

Similarly, pains would be unrepeatables individuated in terms of (i) the token tissue damage and the nociceptors it activates, (ii) spatial and temporal continuities, and (iii) qualitative similarity. Regarding the last issue, while feeling pain in a region turning into an ache provides evidence, from the subject's point of view, for the occurrence of two distinct events, this may or may not correspond to a significant change in degree of tissue damage or in the nociceptor activity in the region.<sup>18</sup>

Regarding painful experiences:

- (1) If the analogy with audition is correct, a subject in pain perceives an event constituted by a damaged region interacting with the surrounding nociceptors. What we directly perceive when in pain are such events and not the region itself or the damage. But again, just as the experienced locations of the proper objects of hearing and vision are commensurable, the locations of pains and damage are similarly commensurable, so one can learn where the damage is located and discover more about it on the basis of the experienced location of the pain.
- (2) As with sounds, the phenomenology of being in pain is at least in part constituted by qualitative aspects of the perceived event. The qualitative aspects, in both cases, are mind-independent. What it is like to be in pain, in the standard case, is for a subject to stand into an acquaintance relation with a relational event.

---

[18] We can speak purely qualitatively of the same pain, as we can speak of the same sound, but in both cases it is plausible that we have in mind a type rather than a token event. Being the same pain requires not just having the same feel but also having the same source. It also requires temporal continuity. Thus a pain may be said to return, but unless what this means is that a continuous pain has regained intensity, we are again speaking of a pain type, albeit a fairly determinate one.

There is an interesting possibility, based on an analogy with echoes (see O'Callaghan, 2009), in which a pain 'returns' in the sense of the same pain being re-experienced on two or more occasions. Whether there are several avenues along which information about a given sensation can travel is an exciting empirical question.

Barring top-down effects on phenomenology, differences in sensory phenomenology are either due to the respective events having different qualitative nature, or to the subject coming to occupy a different perspective *vis-à-vis* the same event.

- (3) Facts about the distal environment (including facts about one's nervous system) bear on phenomenology by determining the perspective from which a sound and its qualitative aspects may (or may not) be encountered. Similarly, we should make a distinction between the phenomenal contribution of the pain's qualitative aspects, determined by the damage and the activation of nociceptors, and the qualification of those aspects by the perspective determined by facts about the upstream processing. As is the case with the distinction between the distal and immediate environment in the case of sound, the division between distal and immediate environment in the case of pain need not be sharp. The nociceptors are connected to the rest of the nervous system, and the immediate gaseous or liquid environment is normally homogenous with the distal environment. The latter does not entail that sounds supervene on states of the distal environment. Likewise, nor should the former entail that pains supervene on upstream states of the nervous system.<sup>19</sup>

### VII. Problems with the Analogy

The comparison between pains and sounds shows that, on a view that pains are relational events, they can be taken to be (1) concrete items located in body parts, (2) having qualitative nature apt to determine phenomenology, (3) which, in select circumstances (a well-functioning nervous system being among them), constitute one's experiential phenomenology. Additionally, as with colours (see section IV above), the realist will argue that pain tokens fall into the same physical event type due to their sharing a causal power; roughly — the power to reveal their shared qualitative nature to a well-positioned perceiver.

In this section, I examine two features of pain which appear to be inconsistent with the metaphysical account I am proposing. I provide

[19] An anonymous reviewer raises the question as to why we should only admit the activation of nociceptors in the supervenience basis of pain. My answer is that, as with sounds, experience provides us with an inkling as to the location of pains, which places constraints on the metaphysics of pain. Sounds are experienced as located distally in the vicinity of their sources. This consideration, as we saw, favours distal views of sound. Similarly, pains are experienced as located in limbs, which favours metaphysical views on which pains turn out to be located in limbs. If pains supervene on damage plus activation of nociceptors, since both the damage and the activation are located in a limb, pains turn out to be located where they are normally experienced to be located.

an interpretation on which each feature turns out to be entirely consistent with my account.

*1. Pains are States of Creatures, not of Body Parts*

One could object that the metaphysical account of pain I have provided does nothing to accommodate the intuition concerning Bain's two cases. Recall the first case: someone's foot is amputated and discarded. The condition of the foot remains the same for some while. Still, intuitively there is nothing painful in the foot after the amputation. This was the major reason we deemed bodily damage insufficient as the basis for pain in the first place. Something further was needed, precisely because the damage obviously remains after amputation, while the item with qualitative nature does not. But it looks like including nociceptors in the basis does not actually help us, since those remain in the amputated foot. So, lest I bite the bullet and reject the intuition, pains cannot be relational events localized in body parts. They would have to supervene on further processes in the nervous system.

Stated shortly: pains are states of creatures, not of body parts. My response is conciliatory: pains are not states of any body part — they are states of appropriately attached body parts. Still, they are not states of a creature in any other sense than simply being owned by the creature. They are neither essentially subjective in the way conscious states arguably are, nor do they supervene on upstream states of the creature's nervous system.

The way to defuse the objection is to focus on what is necessary for the relational event to occur and be sustained. What is first needed are select instances of tissue damage; second is the availability of adjacent nociceptors in the body part/region; third is the activation of those nociceptors by the damage. And while the first two conditions clearly are maintained despite amputation, the third arguably is not.

Consider an example in the case of sound: suppose the air in a chamber containing a vibrating sound source quickly gets evacuated. While the vibration of the source persists, the source ceases producing a sound, as there is no longer a suitable proximal environment to interact with the vibrating source. Similarly, a bunch of severed neurons and the same neurons innervated may count as sufficiently different proximal environments.

Even if one disagrees and insists that the proximal environment remains unchanged after amputation, there is also the possibility that distal environmental conditions can affect the relevant dispositions of

the proximal environment. For instance, two vibrating sources may produce air waves that cancel each other out. Each source would serve as a dampener for the other source, and while, in different circumstances, the mereological sum of either source and the distal environment would have been apt to produce a sound, in the actual circumstances it isn't.

The change in proximal environmental dispositions is even more credible regarding a severed nociceptor. I maintain that only when nociceptors are appropriately connected to the rest of the nervous system are they apt to co-constitute, along with tissue damage, events with the appropriate qualitative profile to count as pains. Importantly, this does not mean that pains are constituted by upstream states of the nervous system. Appropriate connection to the brain is a necessary condition for the proper functioning of nociceptors, just as being plugged into the electric network is necessary for an electric sensor to be able to work. But brain states are not part of the basis of the pain, any more than the electric network is part of the basis of sensor activation.

## *2. Pains are Self-Intimating*

Even if pains can only be had by a creature in its undetached appropriately innervated body parts, it does not follow that the creature experiences those pains in virtue of their occurring. But pains are arguably self-intimating. On the naïve realist account, this would mean that pains are necessarily experienced. However, all physical items are experienced contingently. Therefore, pains cannot be physical events located in body parts.

My response to this objection is again conciliatory. I accept the claim that pains are self-intimating and are bound to be experienced in so far as they occur. This is a mere consequence of the strict conditions I have placed on the occurrence of a pain. Recall that a necessary condition on a nociceptor's being apt to constitute a pain is its being appropriately connected to a well-functioning brain. A necessary condition for a pain to occur is simultaneously a sufficient condition for the subject to become acquainted with the pain.<sup>20</sup>

My opponent could object that being acquainted with the pain is not sufficient for noticing the pain. I agree that, in general, being acquainted with something is not sufficient for noticing it. What one ultimately attends to is subject to top-down influences. Some of them are wholly automatic and some of them are voluntary, but they all serve practical purposes. There are certain sensible aspects which we

---

[20] For the same reasons, pains are private, i.e. no one else can experience my pain.

notice by default (bright colours, loud noises, etc.) and then there are aspects for which we have to be actively looking, listening, etc. in order to bring them in to view. But it seems to me that, if there is one thing we are hard-wired to notice, whatever active or automatic tasks my perceptual system may be engaged in, it would be pain.

### VIII. Conclusion

Giving a perceptualist account of sensation is both a worthy and a difficult project. I have shown that the major difficulties confronting perceptualism about pain can be overcome by providing an adequate metaphysical account of the hypothesized objects of pain, using the guidance of phenomenology. While the crudest candidate for being the object of pain, namely bodily damage, turns out to be inadequate, a more sophisticated account is available on which damage is both involved in the metaphysical basis of the objects of pain, and underdetermines their qualitative nature. On the relational event proposal, the objects of pain turn out to be more complex than bodily damage, while still being located in body parts and being, in a folksy sense, physical. Moreover, precisely because of the nature of said events, it turns out that they cannot occur in inanimate objects, cannot obtain without the subject becoming aware of them, and cannot be experienced by another subject. Not only is the correct metaphysics apt to account for the specific character of painful experiences, but it is also instrumental in explaining away their apparent distinctness from perceptual experiences.<sup>21</sup>

### References

- Aydede, M. (2009) Is feeling pain the perception of something?, *Journal of Philosophy*, **106** (10), pp. 531–567.
- Bain, D. (2003) Intentionalism and pain, *Philosophical Quarterly*, **53** (213), pp. 502–523.
- Bain, D. (2007) The location of pains, *Philosophical Papers*, **36** (2), pp. 171–205.
- Block, N. (2003) Mental pain, in Hahn, M. & Ramberg, B. (eds.) *Reflections and Replies: Essays on the Philosophy of Tyler Burge*, Cambridge, MA: MIT Press.
- Block, N. (2005) Bodily sensations as an obstacle for representationism, in Aydede, M. (ed.) *Pain: New Essays on its Nature and the Methodology of its Study*, Cambridge, MA: Bradford Book/MIT Press.
- Burge, T. (1997) Reflections on two kinds of consciousness, in Block, N., Flanagan, O. & Güzeldere, G. (eds.) *The Nature of Consciousness: Philosophical Debates*, Cambridge, MA: MIT Press.

---

[21] I am indebted to two anonymous referees and to the editors of this special issue for their criticism and very helpful suggestions. Many thanks to Naomi Eilan and Guy Longworth, who read through and commented on the rudimentary version of this paper.

- Byrne, A. (2009) Experience and content, *Philosophical Quarterly*, **59** (236), pp. 429–451.
- Campbell, J. (2002) *Reference and Consciousness*, Oxford: Oxford University Press.
- Casati, R. & Dokic, J. (1994) *La Philosophie du Son*, Paris: Chambon.
- Chalmers, D. (2006) Perception and the fall from Eden, in Gendler, T. & Hawthorne, J. (eds.) *Perceptual Experience*, Oxford: Oxford University Press.
- Crane, T. (2006) Is there a perceptual relation?, in Gendler, T. & Hawthorne, J. (eds.) *Perceptual Experience*, Oxford: Oxford University Press.
- Ivanov, I. (in preparation) Intentionalism and the particularity of perception.
- Kalderon, M. (2007) Color pluralism, *Philosophical Review*, **116** (4), pp. 563–601.
- Kalderon, M. (forthcoming a) Color illusion, *Noûs*.
- Kalderon, M. (forthcoming b) The multiply qualitative, *Mind*.
- Martin, M. (2002) The transparency of experience, *Mind and Language*, **17** (4), pp. 376–425.
- McDowell, J. (1986) Singular thought and the extent of ‘inner space’, in McDowell, J. & Pettit, P. (eds.) *Subject, Thought, and Context*, Oxford: Clarendon Press.
- McDowell, J. (1994) *Mind and World*, Cambridge, MA: Harvard University Press.
- Noordhof, P. (2005) In a state of pain, in Aydede, M. (ed.) *Pain: New Essays on its Nature and the Methodology of its Study*, Cambridge, MA: MIT Press.
- O’Callaghan, C. (2007) *Sounds: A Philosophical Theory*, Oxford: Oxford University Press.
- O’Callaghan, C. (2009) Sounds and events, in Nudds, M. & O’Callaghan, C. (eds.) *Sounds and Perception: New Philosophical Essays*, Oxford: Oxford University Press.
- Pasnau, R. (1999) What is sound?, *Philosophical Quarterly*, **49** (196), pp. 309–324.
- Pasnau, R. (2007) The event of color, *Philosophical Studies*, **142** (3), pp. 353–369.
- Pautz, A. (2009) What are the contents of experiences?, *Philosophical Quarterly*, **59** (236), pp. 483–507.
- Pautz, A. (2010) Why explain visual experience in terms of content?, in Nanay, B. (ed.) *Perceiving the World*, Oxford: Oxford University Press.
- Pryor, J. (2000) The skeptic and the dogmatist, *Noûs*, **34** (4), pp. 517–549.
- Ramachandran, V. (1993) Behavioral and magnetoencephalographic correlates of plasticity in the adult human brain, *Proceedings of the National Academy of Sciences USA*, **90**, pp. 10413–10420.
- Roessler, J. (2009) Perceptual experience and perceptual knowledge, *Mind*, **118** (472), pp. 1013–1041.
- Schellenberg, S. (forthcoming) Perceptual content defended, *Noûs*.
- Shoemaker, S. (2004) Content, character, and color, *Philosophical Issues*, **13** (1), pp. 253–278.
- Siegel, S. (2010) Do visual experiences have contents?, in Nanay, B. (ed.) *Perceiving the World*, Oxford: Oxford University Press.
- Tye, M. (2005a) Another look at representationalism about pain, in Aydede, M. (ed.) *Pain: New Essays on its Nature and the Methodology of its Study*, Cambridge, MA: MIT Press.
- Tye, M. (2005b) Responses, in M. Aydede (ed.) *Pain: New Essays on its Nature and the Methodology of its Study*, Cambridge, MA: MIT Press.